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Management of blisters in minor burns

The best way to manage blisters in minor burns is controversial. Recommended procedures include deroofting,^{1,2} aspiration,³ and leaving blisters intact.⁴ The choice of treatment is usually based on clinical impression and experience. We investigated the effects of these three treatments on bacterial colonisation of the blister fluid or surface of the burn and on wound pain in patients with minor burns.

Methods and results

Altogether 202 patients attending two accident departments for treatment of minor burns were included in the investigation. The extent of injury averaged 1% of body surface area; all burns except one were partial thickness and healed with conservative treatment. Only thermal burns of the arms and legs that could be treated with paraffin gauze dressings were included; most were of mixed depth. All residual sprays and ointments used in first aid were removed by washing with sterile saline. The patients were asked to attend the next weekday burns clinic and were seen thereafter two or three times a week for dressings.

During the first part of the study blisters were left intact for up to 10 days to determine the risk of colonisation or infection of blister fluid; fluid was aspirated through a single puncture hole. In the second part blister fluid was aspirated through a single puncture hole at the first follow up visit and the blister dressed. The lumen of the blister was swabbed once during the next 12 days. Throughout the investigation exposed tissue burns were swabbed once up to 12 days after injury. Sampling times were comparable in aspirated and exposed burns. The sample of fluid (intact burns) and swab (aspirated and exposed burns) were analysed according to standard bacteriological methods. Some of the blisters which were aspirated in the second part of the study were actively deroofted. Patients whose blisters were aspirated or deroofted were asked at least one day later whether the pain in the burnt area had increased, decreased, or remained unchanged after treatment. Differences were assessed by χ^2 tests.

Effect of different treatments on bacterial colonisation

	Blister treatment		
	Intact (n=110)	Aspirated (n=104)	Exposed (n=102)
No (%) colonised any bacterium	15 (14)	73 (70)	78 (76)
No (%) colonised with <i>Staph aureus</i>	2 (2)	19 (18)	45 (44)

The table records the incidence of colonisation in the three study groups. The overall incidence of colonisation with micro-organisms was much lower in the intact blisters than in either the aspirated blisters or the exposed tissue burns ($p < 0.05$). The incidence of infection with the potential pathogen *Staphylococcus aureus* was significantly lower in both the intact and aspirated blisters compared with the exposed burns ($p < 0.05$). Furthermore, aspiration and deroofting had a different effect on the patients' perception of wound pain. None of the 37 patients whose blisters were deroofted experienced a reduction in pain (in 16 pain increased and in 21 it was unchanged), but aspiration reduced pain in 27 out of 73 patients (15 increased, 36 unchanged). This difference was significant ($p < 0.05$).

Comment

Our results show that an intact blister roof prevents colonisation of minor burns by bacteria, especially *Staph aureus*. This conclusion supports the findings of Cope, who observed infected fluid in only one intact blister in 26 patients (*Streptococcus pyogenes*). The importance of colonisation of small burn wounds in terms of morbidity and healing is unknown, but colonisation should be minimised. Infection is a severe problem with major burn

injuries, and the portal of entry of the organisms is probably the burn wound.

Our results suggest that in minor burns blisters should be left intact whenever possible and not be deroofted if they rupture spontaneously. Deroofting is likely to lead to more pain and an exposed surface is associated with a higher incidence of colonisation with *Staph aureus*. Obviously these findings should not dictate an inflexible policy toward treatment. Many blisters will spontaneously rupture and derooft. If blisters are to be drained because of their size or site aspiration is preferable to deroofting, which is warranted only when infection is clinically evident.

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Cervical cytology screening: a comparison of two call systems

A study was undertaken to investigate two methods of call up as part of the pilot scheme for the Nottingham cervical cytology programme, in which the health authority and the family practitioner committee are collaborating. There is a consensus that such programmes should closely involve general practitioners and that encouragement from them achieves high rates of response.^{1,2} This study was designed to discover whether a letter of invitation from the general practitioner to women with no record of having had a cervical smear test would be more effective if it contained a definite date and time for a smear test than if it just invited the woman to contact the surgery and make her own arrangements.

Patients, methods, and results

Five general practices, which did not have an established programme, agreed to participate in the project. They comprised four two doctor and one four doctor partnerships and represented a reasonable geographical spread within the authority from inner city to suburban. Women aged 45-65 were identified from the register of the family practitioner committee. There were 2264 women in the five practices. Notes were available for 2174, and of these 906 (42%) had no record of having had a cervical smear. The general practitioners were asked to exclude any women they did not wish to call for a smear; 68 were excluded, most because of hysterectomy but some because of other medical conditions.

Fifty women from each practice were randomly selected to take part in the study with 25 in each study group. This size of sample was chosen so that the project could be completed in a reasonable time without creating an excessive demand for smears in the practices in the short term. The first group was sent a letter inviting the patient to contact the surgery to make arrangements for a smear test (letter only group). The second group was sent one that included an appointment for a smear and asked the patient to make alternative arrangements with the surgery if it was inconvenient or if she wished to cancel for other reasons (appointment group). Both groups were asked to respond within three weeks of receiving the letter. Non-respondents in both groups were sent up to two reminders; they were similar to the first letter except that the alternative of attending a health authority clinic was mentioned.

Before the letters were sent three women left their practices, and of the 247 letters sent seven were returned as "address unknown." This reduced the number in the letter only group to 122 and that in the appointment group to 118. Responses to the two methods of call are shown in the table.